SERVICE BULLETIN

No. 400-3-00

Compliance mandatory

Subject:	**Installation of improved flap guide rollers**
Affected Aircraft:	EA-400 SN 03 through 13
Purpose:	A guide roller of the left inner flap track has been reported to have jumped out of the flap track rails during flap retraction. Corrective actions to avoid this condition have to be taken.
Approval:	The technical content of this Service Bulletin has been approved by the LBA.

This Service Bulletin is divided in TWO PARTS, check each Part for specific Compliance Time and Instructions

PART I:

Part I of this Service Bulletin provides initial instructions to be performed prior to ferry flight to EFB due to Part II has to be carried out at Extra Flugzeugbau GmbH facilities or Extra Flugzeugbau GmbH personnel.

Compliance Time for Part I:

Prior to ferry flight. The airplane may only be operated within limitations as given below:

- A positive result of instructions mentioned below.
- Flap extension is limited to 15° position and
- Flap extension speed is limited to 100KIAS

Prolonged landing distance has to be taken into account

Instructions:

Functional adjustment check:
Spanwise alignment: Check whether any guidance roller on the inner track protrudes more than 3mm outside the inner track guiding keyways when flaps are pulled outboard until the stop. The stop is reached, when one of the sliding surfaces on the outboard end of the inner or outer flap segment contacts the middle or outer flap track. Repeat the check for the rollers in the outer flap track while pushing the flaps inboard. Verify visually that stops are definitely reached.

PART II:

Part II of this Service Bulletin provides the respective corrective actions.

The measures described in the following passages are intended to avoid the possibility of the flap guide rollers to jump out of their respective flap-track rails. This is achieved by installing specially contoured guide rollers with a greater diameter collar on the back side of the track to avoid them to be pulled out of the track rail. These "mushroom rollers" have to be installed on the inner flap track on each side instead of the existing rollers in the lower rails. In addition the middle flap track (y=±2550) has to be replaced by a stiffer design.

Compliance Time for Part II:

Before returning to service (Release to Service).

Instructions:

1. Replace the following parts:

- Rear flap guidance rollers (SKF KRV16PP as given on drawing EA-15022.50/60 original issue on inner flap track (y=±550) by specially manufactured "mushroom guidance rollers" as given on drawing EA-15022.50/60 issue A.
- flap tracks at y=±2550mm (middle track, drawing EA-15345.01 issue B) must be replaced by modified track according to drawing EA-15345.01 issue C
- Inner flap track attachment angle EA-15340.03 by EA-15340.20 as given on EA-15022.50/60

2. Flap track deformation test:

a) Check inner flap tracks (y=±550) for deformations in width of guiding keyways. It must be between 16.3 and 16.8mm on all three flap-tracks. If wider keyways are found replace respective flap-track
b) Visually inspect roller contact areas in flap track keyways for deformation or wear. Look especially for the occurrence of burrs at the edges of the keyways. If permanent deformation can be found replace respective track

3. Reinstall flaps (it is advisable to check dimensions according to item 5) before, nevertheless the functional adjustment check as itself is sufficient for release to service)

4. Functional adjustment check:

a) Spanwise alignment: Check whether any guidance roller on the inner track protrudes more than 3mm outside the inner track when flaps are pulled outboard until the stop. The stop is reached, when one of the sliding surfaces on the outboard end of the inner or outer flap segment contacts the middle or outer flap track. Repeat the check for the rollers in the outer flap track while pushing the flaps inboard. Verify visually that stops are definitely reached.

b) Minimum play in guidance keyways: Check all flap segments for minimum free play of rollers in keyways. Therefore lift each flap segment manually at trailing edge and observe for positive free play of flap segment at trailing edge. Check this for all four flap segments and for each flap position (0°, 15° and 30°).
c) Check whether the rollers on the middle flap track (y=±2550) are rolling and not slipping by the following test: Extend flaps to their 30° position and retract them while manually applying a load of about 200N upward at the trailing edge of the flaps near the track. If a roller is slipping replace rollers as given on EA-15022.10/20 original issue by a modified assembly as given on EA-15022.10/20 issue A.
d) Check width of gap between aileron and outer flap segment when pulling the flaps outboard against the stop as described in a). Min. width is 8mm. If a narrower gap is found shorten the overhanging skin of the flap as required.

5. If deficiencies are found in the functional adjustment check, the flap-tracks have to be inspected for proper alignment:

Check flap tracks for proper torsional alignment (cord over all three lower keyways). Max allowable distance of lower keyway centerline of the middle flap track when cord is aligned with outer and inner flap track keyway is 2mm.
Check distance between flaptracks at their rear end. Distance between inner and middle track is 1989mm ±2mm and between middle and outer track 1827,5mm ±2mm
For further details of flap track positioning refer to drawings: EA-15022.00, EA-15022.10 issue A, EA-15022.30 and EA-15022.50 issue A

6. Replace actual Circuit Breaker for Flap actuation (nominal 10A) by a breaker with a reduced setting (nominal 7.5A).

7. Check flap actuation adjustment according to Flap adjustment instruction in chapter 27-53 of maintenance manual. Readjust actuation mechanism if deficiencies are found.

The above described modification has to be documented in the aircraft log. Additional results or findings in connection with the modification described above have to be reported.